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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/507,532	02/18/2000	Christopher T. Koh	2695.2002000	7957

21005 7590 01/30/2003

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EXAMINER

GESESSE, TILAHUN

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/507,532

Applicant(s)

KOH, CHRISTOPHER T. 

Examiner

Tilahun B Gesesse

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 1 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 2-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No: _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1,9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adamiecki et al (us 5,974,302) in view of Scherer et al (us 5,844,939).

As to claim 1, Adamiecki et al disclose an apparatus for microwave radio frequency wherein an upstream radio frequency band is used for transmitting signals in an upstream direction (mixer 80 and mixer 56), and a downstream radio frequency band is used for receiving signals a downstream direction (mixer 52 and mixer 68), the apparatus (fig.1) comprising: Adamiecki et al disclose an up-converter comprising at least two up-converter stages, each up-converter stage including a mixer (mixer 80 and mixer 56) , and each mixer accepting a respective local oscillator signal (PCS local oscillators, 62 and 64) wherein a final up-converter stage is connected to provide a

Art Unit: 2685

transmit RF upstream signal (56 through switch 38 and antenna 10 transmit RF fig.1).

Adamiecki et al disclose a down-converter (for PCS mixer 52 and 68), comprising at least two down-converter stage, each down-converter stage including a mixer and accepting a respective local oscillator signal wherein a first down-converter stage is connected to receive a receiver RF downstream signal (RF signal down converted at mixer 52 PCS oscillator 64 and mixer 68 PCS LO 62 second down-converted)(fig.1 and col. 15-62). Adamiecki et al disclose the mixers the first down converter stage and the final up converter stage being connected to receive a common local oscillator signal (first down converter 52 and final up converter 56 connect with PCS LO 64, fig.1).

Adamiecki et al disclose a local reference oscillator, for providing a local reference signal (58 of fig.1). Adamiecki et al do not disclose a first frequency multiplier circuit, connected to receive the local reference signal, and to provide the common local oscillator signal at a frequency which is an integer multiple of the local reference signal. However, Scherer et al disclose a first frequency multiplier circuit (45) connected to the local reference signal (38), to provide the common local oscillator signal at a frequency which is an integer multiple of the local reference signal (col.6 lines 50-60). It would have obvious to one of ordinary skill in the art at the time of invention was made to modify Adamiecki in multiplying the local oscillator by integer, as evidenced by Scherer et al. in order to provide cost effective transceiver construction. Adamiecki et al do not disclose the local reference signal is used to derive the local oscillator signal coupled to one of the mixers in an up-converter stage, which is not the final up converter stage. However, Scherer et al disclose the local oscillator signal coupled to one of the mixers

Art Unit: 2685

in an up-converter stage, which is not the final up converter stage (oscillator 38 to one of the mixers in an up converter 34 which is the first up converter stage, fig.4). It would have obvious to one of ordinary skill in the art at the time of invention was made to modify Adamiecki in multiplying the local oscillator by integer, as evidenced by Scherer et al. in order to provide cost effective transceiver construction. As to claim 9, Adamiecki et al disclose an upstream RF band and a downstream RF band are separated in frequency (col.1 lines 20-23). As to claim 10, Adamiecki et al disclose an upsteam signal and a downstream are coupled to an antenna (fig.1).

4. Claim11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adamiecki et al in view Paul et al as applied to claims above, and further in view of Peterson (us 6,041,219).

As to claim 11, Adamiecki et al in view of Scherer et al an ortho mode transducer (OMT) couples the transmit RF upstream and receive RF downstream signals to the antenna. However, Peterson discloses an ortho mode transducer (OMT) couples the transmit RF upstream and receive RF downstream signals to the antenna (col.2 lines 64-67 and fig.1). It would have been obvious to one of ordinary skill in the art at the time of invention was made to modify Adamiecki et al in view of Scherer et al in utilizing orth. Mode transducer or OMT in order to isolate the transmit and receive signals.

Allowable Subject Matter

5. Claims 2-8 and 12 are to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Application/Control Number: 09/507,532
Art Unit: 2685


Page 6

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385. The fax phone number for this Group is (703) 872-9314. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4750.

TBG

Jan. 17, 2002

Tilahun Gesesse


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